



# THE MEMPHIS DEPOT **TENNESSEE**

## ADMINISTRATIVE RECORD **COVER SHEET**

AR File Number \_\_\_\_\_\_

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## **RFA Report**

Department of Defense Memphis Depot Memphis, Tennessee

### EPA I.D. No. TN4210020570

Prepared for:

Ms. Rowena Sheffield U.S. Environmental Protection Agency Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

Prepared by:

A.T. Kearney, Inc. 222 South Riverside Plaza 25th Floor Chicago, Illinois 60606

EPA Contract No. 68-W9-0040 Work Assignment No. RO-04-05

January 1990

## RFA REPORT

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## I. <u>EXECUTIVE SUMMARY</u>

A Preliminary Review and Visual Site Inspection was conducted to identify and assess Solid Waste Management Units (SWMUs) and other Areas of Concern (AOCs) at the DOD Defense Depot Memphis, Tennessee (DDMT). This report summarizes information found during a preliminary review of the DDMT file materials at the Tennessee Department of Health and Environment and EPA Region IV. Further information for this report was obtained via the DDMT Visual Site Inspection (December 6 through 8, 1989) and subsequent data assessments that were performed to evaluate the release potential of hazardous constituents from SWMUs and AOCs.

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The Hazardous and Solid Waste Amendment (HSWA) of 1984 expands the scope of the U.S. Environmental Protection Agency's (EPA) authority under the Resource Conservation and Recovery Act (RCRA) to require corrective action for the release of hazardous constituents from SWMUs at those facilities which have, or are applying for, a RCRA permit. Corrective action applies to all SWMUs and AOCs that have the potential to release hazardous constituents.

The first phase of the Corrective Action Program established by EPA involves the performance of a RCRA Facility Assessment (RFA). The RFA includes a Preliminary Review (PR), during which information concerning the facility is reviewed and a preliminary list of SWMUs and AOCs is formulated. The PR is followed by a Visual Site Inspection (VSI), that consists of a site visit where SWMUs and AOCs are assessed to determine their potential for release of hazardous wastes or constituents. Pending results of the VSI, a Sampling Visit may be performed to further evaluate the possibility of hazardous constituent releases to the environment. The purpose of all three phases of the RFA is to identify SWMUs and AOCs, and to assess the release potential of hazardous constituents from these units. This document summarizes the results of the Preliminary Review and Visual Site Inspection conducted for the DOD Defense Depot Memphis, Tennessee (DDMT).

The DDMT is currently one of six principal distribution depots operated by the Defense Logistics Agency (DLA) for the Department of Defense (DOD). The purpose of the DDMT is to store and distribute DOD commodities throughout the south- central United States. The facility, which began operation in 1942, consists of 127 structures on 642 acres, and employs approximately 2,700 people. The DDMT has routinely received, handled, stored, and redistributed a wide variety of hazardous materials. The majority of these operations have taken place on the main installation. Both past and present hazardous waste generation comes primarily from the following sources:

containers of hazardous materials which have reached their shelf-life limit and are no longer usable by the armed forces; leaks and spills which occur from damaged or mishandled hazardous materials containers; and small quantities ofhazardous wastes from vehicle maintenance and equipment painting operations.

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An organization which is located at the DDMT is the Defense Reutilization and Marketing Office (DRMO). The DRMO is responsible for storing and disposing of hazardous materials and hazardous waste generated by the DDMT and several DOD installations in the Memphis, Tennessee area.

Since 1975, the containers of hazardous materials which have reached their shelf-life limit have been stored at the DRMO area on the DDMT. The materials are either sold for reuse or recycling, or properly manifested for disposal at the Chemical Waste Management facility in Emelle, Alabama. The disposal practices prior to 1975 are not well documented. Facility records indicate that the Dunn Field area was used from the 1940s to 1970 for burying and burning waste. The wastes managed in this area included mustard and lewisite gases, oil and grease, paint and paint thinner, methyl bromide, pesticides, herbicides, and food supplies.

Wastes from vehicle and facilities maintenance operations currently consist of waste oil and spent Safety-Kleen solvents. Waste oils are collected and recycled. There are nine Safety- Kleen units (SWMU No. 40) used for parts cleaning which are maintained by an outside contractor.

Waste paint and paint solvents generated by various painting operations at the facility are placed in drums or containers at Satellite Drum Accumulation Areas (SWMU No. 41). When the drums or containers are full, they are taken to the DRMO area for proper manifesting to the Chemical Waste Management facility in Emelle, Alabama.

Residues from cleanups of hazardous material spills are placed in drums and shipped off-site for disposal. Damaged or leaking containers or drums containing hazardous materials are taken to the Recoup Area Building (SWMU No. 28) where they are emptied into new containers. The old containers are cleaned and either sold for scrap or disposed of as a hazardous waste. There are no comprehensive records of spills at the facility, and the disposition of damaged hazardous materials in the past is unknown.

The PR and VSI resulted in the identification of forty-nine (49) SWMUs and eight (8) AOCs at the DDMT. Fourteen (14) of the SWMUs and four (4) AOCs identified were deemed to require no further action. Thirty-one (31) SWMUs and three (3) AOCs require preliminary RCRA Facility Investigation (RFI) sampling and analysis. Four (4) SWMUs and one (1) AOC require full characterization RFIs.

## II. <u>INTRODUCTION</u>

## A. File Search and VSI

The objectives of this RCRA Facility Assessment (RFA) are to:

 Identify all Solid Waste Management Units (SWMUs) and other Areas of Concern (AOCs) located at the Defense Depot Memphis, Tennessee;

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- Use information obtained from a file search and a Visual Site Inspection (VSI) to assess the potential for release of hazardous wastes or hazardous constituents from each SWMU and other AOC and;
- 3. Determine for each SWMU and other AOC, what further measures, if any, should be taken to safeguard human health and the environment from a release. When sampling is deemed appropriate for any unit, determine the type and/or extent of a known or suspected release, and provide a site-specific suggested approach for sampling and analysis.

The file search was performed by Elizabeth Topp of A.T. Kearney at the Tennessee Department of Health and Environment and at U.S. EPA Region IV. The file search consisted of a desk-top study of RCRA and CERCLA files for the site obtained from EPA Region IV and State of Tennessee. The purpose of the file search was to compile a preliminary list of SWMUs and other AOCs located at the facility.

The VSI was performed on December 6, 1989 through December 8, 1989, by Jack Slechta and David Walker of A.T. Kearney. The representative of the regulatory agency participating in the VSI was Mr. Mark Thomas of the Tennessee Department of Health and Environment. The facility was represented by Mr. Danny Chumney. The purpose of the VSI was to verify the findings of the file review, assess the potential for release of hazardous wastes or hazardous constituents from each SWMU and other AOC, and to fill information gaps identified during the Preliminary Review.

### B. <u>Facility History, Description, Wastes Generated,</u> and Disposal

The Defense Depot Memphis Tennessee (DDMT) is located in the south-central portion of the city of Memphis, Tennessee. The facility occupies about 642 acres of land with 127 structures. It is three miles north of the Memphis International Airport, and to the northwest of the junction of Interstate Routes 55 and 240 (Figure 2-1). The coordinates of the center of the main installation are 35° 05' 23" North and 90° 00' 00" west.

The facility consists of two distinct areas. The main installation consists of 578 acres bordered by Airways Boulevard on the east, Perry Road on the west, Ball Road to the south, and Dunn Road to the north. The main installation is very highly developed and contains most of the buildings and material storage yards for the facility. The Dunn Field area is located just to the north, across Dunn Road from the north-west corner of the main installation. The area consists of approximately 64 acres of undeveloped land which has historically been used for storage of bauxite and fluorospar and for waste disposal.

The DDMT began operation in 1942. The DDMT's initial function was to provide supplies, storage and maintenance services for the Army Engineer, Chemical, and Quartermaster Services.

In 1964, the facility was placed under the direction of the Defense Supply Agency, which is now the Defense Logistics Agency (DLA), and began its current mission. The depot is currently one of six principal distribution depots in the DLA integrated wholesale distribution system. The depot's mission is to receive, store, maintain, inventory, and issue clothing, textiles, general supplies, and medical supplies. Its major function is the distribution of those commodities to military bases throughout the south-central United States, the Caribbean, and South America. The facility currently employs approximately 2,700 people (References 1 and 4).

There are several other organizations which report to the DLA which are also located on the DDMT property. Specifically, those organizations are the Defense Reutilization and Marketing Region (DRMR) and the Defense Reutilization Marketing Office (DRMO). In 1980, the Department of Defense (DOD) designated the DLA as the responsible organization for the proper disposal of DOD hazardous materials and wastes. The DLA then delegated the job to the Defense Reutilization and Marketing Service (DRMS). The DRMS is organized into five DRMRs and 217 DRMOs. The DRMS has the overall responsibility of providing proper disposal of hazardous wastes generated at several installations throughout the region. The DRMO facility at the DDMT is responsible for actually performing the storage and disposal functions. The DRMO facility currently handles expired shelf-life hazardous materials, hazardous waste from maintenance operations, and residues from hazardous materials spill cleanups from the Defense Depot. The DRMO also accepts hazardous waste from the Memphis Naval Air Station and the Air Force National Guard. Wastes are currently stored for less than 90 days. The hazardous materials and wastes are either sold for recycling or reuse, or are properly manifested and shipped to the Chemical Waste Management facility in Emelle, Alabama (References 1, 2 and 4).

The DDMT has routinely received, handled, stored and redistributed a wide variety of hazardous materials since it began operating in 1942. The majority of these operations have taken place on the main

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installation. Both past and present hazardous waste generation originates primarily from the following sources: containers of hazardous materials which have reached their shelf-life limit and are no longer usable by the armed forces; leaks and spills which occur from damaged or mishandled hazardous materials containers; and small quantities of hazardous waste from vehicle maintenance and equipment painting operations (References 1 and 4).

Hazardous materials brought onsite for future distribution are stored in the manufacturers' containers. Storage of the materials has taken place throughout the central and western portions of the main installation, both inside of the buildings and outside on the ground surface and concrete pade. The current storage areas are listed below.

<u>Hazardous Mai</u>	<u>terials Product Storage Areas</u>
Location	Item
Building 629	Various chemicals (toxics, corrosives, oxidizers)
Building 319	Flammable materials, toxics
Area X-25	Flammable materials
Building 835	Anti-Freeze
Building S-873	POL Products and overflow chemicals from 629
Building 689	Short-term storage of flammable liquids, for shipping and receiving

(Reference 4)

Occasionally, items reach their shelf life before they are needed by the armed forces. Disposition of these materials and other hazardous wastes generated from the 1940s through 1975 is not well documented. Available facility records indicate that a portion of Dunn Field was used for both the burning and burying of hazardous and nonhazardous expired shelf-life material until 1970. The wastes managed included: mustard and lewisite gases, oil and grease, paint and paint thinner, methyl bromide, pesticides, herbicides, and food supplies.

Individual locations of the burial and burn locations are described in the solid waste management unit descriptions in Section III and depicted on the map in Appendix A-1.

There are no records available concerning the disposition of expired shelf-life hazardous materials or other hazardous wastes from 1970 through 1975. There are no records which indicate that the main installation was ever used for waste disposal (Reference 21).

Beginning in 1975, expired shelf-life items were brought to the area which is now operated by the DRMO. An attempt was made to sell the reusable items while the remainder of the wastes were disposed of off-site.

The current DRMO operation began in 1980. All hazardous materials and hazardous wastes from the DDMT are now disposed of by the DRMO (Reference 23).

Throughout the history of the DDMT, there have been occasional spills of hazardous materials and leaks which have occurred as a result of damaged containers. There is no comprehensive record of historical spills at the facility. Containers that were damaged or leaking were taken to the Former Recoup Area (SWMU No. 27). The material in the containers was then transferred to a new container and the old containers discarded. The transfer process occurred both on the concrete flooring inside Building S-873, and outside on the gravel parking area. Soil contamination has been found in this area but has not been fully investigated.

The recoupment operation was transferred to the Recoup Area Building (SWMU No. 28) in 1986. This building was specifically designed for performing the recoupment activities and contains many safeguards to prevent release of hazardous constituents to the environment (References 1 and 21).

#### C. <u>Environmental and Demographic Setting</u>

The DDMT is located in the south-central part of the city of Memphis. The surrounding land use ranges from residential to commercial and light industrial. The facility consists of two distinct areas. Airways Boulevard, which is a major commercial corridor, borders the main installation on the east. To the south is Ball Road and a residential area with I-240 and Nonconnah Creek beyond. The west side of the main installation is bordered by Perry Road and more residential areas. To the north across Dunn Road, which is the north boundary of the main installation, is a truck terminal, the Dunn Field portion of the DDMT, and a residential area. A large commercial complex and a railroad yard border the northwest corner.

The Dunn Field area is located just to the north, across Dunn Road from the northwest corner of the main installation. The area consists of approximately 64 acres of undeveloped land. To the west and north is a truck terminal, a small residential area, a rail line and a large substation. To the east across Hays Road is a residential area.

In 1980, the population of the City of Memphis was approximately 700,000 and Shelby County, which includes the city, was 800,000 (Reference 4). The largest concentration of the population is to the north of the depot.

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The climate of study area is characterized humid, warm summers and cold winters. The annual mean temperature is 62 degrees, and the daily mean temperature ranges from 39.6 degrees in January to 82.1 degrees in July. The average annual precipitation is 51 inches, which is spread fairly evenly throughout the year. Prevailing winds are from the south at less than 11 mph (Reference 22).

The physiography of the south-central Memphis area where the DDMT is located is that of the Gulf Coastal Plain. The terrain varies from nearly level to rolling with slopes of up to 10 percent. The upland areas are generally flat, and the valley is broad and shallow. The average elevation is approximately 300 feet, and the relief seldom exceeds 30 feet (References 24 and 26).

The facility is located on a local drainage divide of Nonconnah Creek, 0.5 miles to the south, and Cane Creek, 0.25 miles to the north. Cane Creek flows southwest and joins Nonconnah Creek approximately 1.5 miles southwest of the site. Nonconnah Creek then flows west approximately four miles to McKellar Lake. McKellar Lake empties directly into the Mississippi River. There are no surface water intakes located downstream of the facility (Reference 3). The streams and lake are used for recreational purposes.

The topography of the main installation is generally flat with elevations ranging from approximately 315 feet along the north boundary, to 265 feet at the southern boundary. Most of the steeper areas occur in a few steps which divide the main installation roughly into thirds from north to south. The main installation is generally higher than or level with the surrounding area so that it does not receive run-off from other areas. Surface drainage on the main installation is accommodated with storm sewers and drainage ditches which connect to city storm sewers or a small creek. Run-off from the west half of the facility flows to the west where it enters Tarrent Branch, a direct tributary to Nonconnah Creek. Run-off from the northeast corner of the facility flows north and enters unnamed tributaries of Cane Creek. Run-off from the southeast area flows south or southeast to unnamed tributaries of Nonconnah Creek (References 4 and 26).

The only perennial surface water bodies on the DDMT are two ponds located in the southeast corner of the DDMT. Lake Danielson is a four-acre manmade lake which is used as a source of fire-fighting water. The lake accepts drainage from the golf course and a storm sewer, and discharges it to the south during periods of heavy rain. The second is a small decorative pond which accepts drainage from the golf course and the southeast corner of the site and discharges it to the south during periods of heavy rain. Samples of both the water and sediments from both ponds contain pesticides and herbicides as well as elevated levels of heavy metals (References 1, 4, and 26).

The topography of Dunn Field area is fairly level with elevations ranging from 310 feet on the east to 205 feet near the southwest corner. The ridge which runs along the east side turns northwest and bisects the northern half of Dunn Field. Run-off from the northwest corner and the southern half of Dunn Field flows off the property to the west, primarily by overland flow and small drainage swales. The northwest corner drains to a concrete-lined ditch which originates in the residential area to the east and flows north to Cane Creek (References 4 and 26). The entire facility is above the 100-year floodplain (Reference 2).

The predominant surface soil association found in the DDMT site prior to construction of the depot was the Memphis-Granda-Loring Association. Characteristics of this association include yellow brown to dark brown color, sloping, well-drained to moderately well-drained, silt deposits varying in thickness from six to eight inches. The permeabilities of the Memphis soils vary from  $4.4 \times 10-4$  to  $1.4 \times 10-3$  centimeters per second. Construction activities at the Depot have altered the soil on the majority of the site to such an extent that the soil type is now classified as graded land with silty materials.

Two areas on the site which have not been significantly altered include the northeast corner of Dunn Field and the southeast corner of the golf course. The predominant soil type in these areas is the Memphis Association, a clay, sandy, silt loam which is suitable for pasture lands and crops. The Memphis soil type is well drained; however, it is subject to erosion if unprotected (Reference 4).

The DDMT facility is located in the north-central part of the Mississippi embayment, which is a broad trough or geosyncline. The axis of the trough roughly parallels the Mississippi River, and it plunges to the south. The trough is filled with a wedge of several thousand feet of Cretaceous, Tertiary, and Quaternary sediments which dip gently to the south and southwest. The sediments in the study area are primarily Tertiary and Quaternary unconsolidated sands, silts, and clays with minor amounts of lignite. Figure 2-2 presents a generalized stratigraphic column of the geologic units underlying the study area (References 24 and 260).

The uppermost geologic unit at the facility is loess. Loess is a eolian deposit consisting of silt, silty clay, sand, or a mixture of the materials. The material is thickest along the bluffs near the Mississippi and thins toward the east. The loess deposits at the DDMT range from 6 to 40 feet (References 1, 24, and 26).

Quaternary and possibly Tertiary-age fluvial deposits underlie the loess throughout the DDMT facility. The fluvial deposits occur beneath the upland areas and valley slopes in the Gulf Coastal Plain and are the remnants of ancient alluvial deposits of either present streams or ancient drainage systems. The deposits consist primarily of sand and gravel, with minor lenses of clay. The fluvial deposits range in thickness from approximately 45 feet to 98 feet at the depot (References 1, 24 and 26).

The Jackson Formation and the upper part of the Claiborne Group lie beneath the fluvial deposits. These units consist primarily of clay, silt, and fine sands with minor lenses of lignite. The clays are primarily montmorillonitic. The Jackson Formation and upper Claiborne Group is a regionally significant confining unit for the underlying Memphis Sand, which is an important aquifer in the region (References 1, 24 and 26).

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System	Serves	Group	Stratigraphic unit	Ditters	Lithology and manufact tighticance
Quetarnery	Na locane and Planstocena		A1) yy 108	0-175	Sand, Graves, sitt, and Clay, chody its the Hististica Allustal Alain and allustal plains of streams in the Gulf Coastal Plain. Thickest beneath the Allustal Plain, energy commonly between 100 and 150 feet shice; generally less than 50 feet thick glassemers. Arouses water to comestic, form, incustrial, and irrigation webls in the Hististon Allustal Plain.
	Pleistocene		LDess	0-65	Sitt, sity play, and winder kand, Principal unit at the surface in upland areas of the Gulf Coastal Plain. Thickest on the Duffs that Donger the Hississippi Alluvial Plain; thinner eastward from the pluffs. Tends to retard downward movement of weter providing recharge to the fluvial deposits.
Qualernary and Tertiary(?)	PlessCocene and Placemes?)		Fluvial deposits (tarrisce deposits)	0-100	Sand, graver, minor tray and ferruginous sandstone. Generally underline the loss in voland areas, out are locally adsent. Thickness varies greatly because of erosional surfaces at top and bale. Provides mater to many operation and farm wells in rurs? areas.
		3	Jackson Formetion end upper part of Claiborns Group, includes Cockfoeld end Cook Mountain Formetions (capping clay)	D-350	Liay, SILC, Sand, and Fightle. Excause of Similarities in Ethningy, the Jackson formation and upper vart of the Classonne Group cannot be reliably subdivided based on evailable information. Nost of the pre- served sequence is the Coorfield and Coor Mountain formations undivided, but locally the Coorfield may be overlain by the Jackson formation. Serves as the upper confining ded for the Memoria Sand.
Tentiany	Essene	Elaisorne :	Memphis Sand ("SùO-foot" sang)	900-890	Sand, Giay, and minor lightle. Inits and of sand with lenses of clay at various stratigraphic nonigons ind minor lightle. Thickest in the southwestern part of the Amponis irea: thinnest in the northeastern dart. Principal aquifer providing sater for municipal and industrial supplies east of the mississippi River; sole source of water for the City of Amponis.
			Ficur Island Formation	150-310	Liey, List, Sand, and Lightta. Consists crimerily df silty clays and sandy silts with lensus and inter- beds of fine sand and lightta. Serves as the lower confining bed for the Remonis Sand and the upper confining bed for the Fort Pillow Sand,
		Wilcos	Fort (1)law Sand (11400-feet" sand)	125-305	Sand with minor clay and lightes. Sand is fine to medium. Thiskess in the southwestern part of the the memoris area; thimmest in the northern and north- mastern parts. Once the second orincipal souther supplying the City of Remonis; still used by an industry. Principal souther providing water for municipal and industrial supplies west of the Missission liver.
	Palaocene		Old Breastworks Formation	180-150	Clay, shit, sand, and lignite, Contists primarily of sulty clays and claywy shits with lumism and inter- boos of fine sand and lignite. Serves as the lower contining bed for the Fort Pillow Sand, along with the underlying Porters Creek Clay and Clayton formation of the Midway Group.

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Figure 2-2

Stratigraphic Column for the Memphis, Tennessee Area (Reference 24) The city of Memphis relies on ground water for all of its potable water supply. There are three principal fresh water aquifers which occur in the DDMT area. They are, the Pluvial Deposits Aquifer, Memphis Sand (500 foot sand), and the Fort Pillow Sand (1,400 foot sand). The Fluvial Deposits Aquifer constitutes the shallow, unconfined, water table aquifer, which is separated from the underlying artesian aquifers by the Jackson-Upper Claiborne confining bed. The Memphis Sand and Fort Pillow Sand artesian (confined) aquifers are separated by the Flour Island confining bed (References 24 and 26).

The shallow water table aquifer, which is located in the fluvial deposits at the DDMT, provides water supplies to domestic and farm wells in rural areas in western Tennessee. The aquifer is not currently used in the immediate study area since public supplies are available. A well survey conducted in the area within a one-mile radius of the depot did not reveal the existence of any residential wells. Recharge of the unit is primarily from infiltration of rainfall (Reference 24).

The depth to the water table at the facility is approximately 65 to 75 feet. The level may vary due to seasonal changes. The flow direction in the Dunn field area is fairly well defined and is to the west or southwest. The flow directions on the main installation are not as well defined and may be influenced by the shape of the top of the underlying Jackson-Upper Claiborne group confining bed (References 24 and 26).

The Jackson-Upper Claiborne group is a very important regional confining unit for the underlying aquifers. The top of the formation appears to be an ancient erosional surface and hence is very irregular. There is evidence to suggest that the formation is not laterally continuous throughout the Memphis area. It is possible that in some areas the confining bed is completely absent and the Memphis Sand is directly overlain by the Fluvial deposits and that recharge of the Memphis Sand from the Fluvial deposits could occur. The contours of the top of the Jackson-Upper Claiborne formation are not well defined at the main installation. If the Jackson-Upper Claiborne is missing beneath parts of the facility, then it is possible that any contaminants which are in the soil and shallow ground water on the main installation could easily reach the Memphis Sand (References 2 and 26).

The Memphis Sand is the most important source of potable water in the study area. The unit consists of a thick body of sand with minor lenses of clay. The City of Memphis water supply system serves approximately 700,000 people and 95% of the water comes from the Memphis Sand. There are approximately 25 wells, which withdraw water from the Memphis Sand, in the Allen well field. The latter is located approximately one mile to the west of the facility boundary. There is no specific information about the composition of the Memphis Sand beneath the DDMT.

The top of the Memphis Sand in the study area is approximately 300 feet below the ground surface, but may be closer if the confining unit is absent. The unit is approximately 700 feet thick in the study area (References 24 and 26).

The Fort Fillow Sand occurs at a depth of beneath the study area. This unit consists of 125 to 305 feet of fine to medium sand with some beds of clay and lignite. It is separated from the overlying Memphis Sand by the Flour Island formation which consists of 160 to 310 feet of silty clay and sandy silt. The Fort Fillow formation currently supplies approximately five percent of the potable and industrial use water in the Memphis area (Reference 24).

Two of the Allen Field supply wells have been closed due to contamination from an industrial source, not associated with the DDMT, located near the wells. Further information about the contamination or the source is not available due to legal proceedings. This reinforces the idea that the Jackson-Upper Claiborne confining unit may not be laterally continuous throughout the study area. Samples collected from the remaining wells in the field have not exhibited any further contamination. There is no information about the quality of the ground water in the Memphis Sand directly beneath the DDMT facility. Ground-water monitoring wells at the DDMT currently monitor the water table aquifer in the Fluvial deposits only. See Appendix A-1 and A-2 for the location of the monitoring wells at the DDMT (References 3 and 26).

Results of ground-water monitoring of wells in the Dunn Field area indicate contaminants are present in the shallow ground-water at the western edge of Dunn Field. Constituents detected at greater than background levels include antimony, barium, chromium, copper, lead, mercury, nickel, and zinc. Volatile organic compounds were also detected, including: 1,1 dichloroethene; 1,2-dichloroethylene; 1,1,2,2 tetrachloroethane; tetrachloroethylene; and trichloroethene in the ten to hundreds ppb levels. See Appendix D for the analytical results of ground-water monitoring at Dunn Field (Reference 26).

Ground-water monitoring results at the main installation indicate above-background levels of barium, chromium, copper, lead, mercury, nickel, and zinc, as well as low levels of several volatile organics (tetrachloroethene, carbon tetrachloride and trichloroethene). See Appendix D for the analytical results of ground-water monitoring at the main installation (Reference 26).

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## III. <u>SWMU DESCRIPTIONS</u>

A total of forty-nine (49) Solid Waste Management Units (SWMUs) and eight (8) Areas of Concern (AOC) are described in this section. Release pathways from each unit to all media are indicated as non-existent (N), low (L), moderate (M), high (H), or unknown (U).

P

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SWMU NUMBER: 1 PHOTO NUMBER: 1-2

NAME: Mustard Gas Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: July 22, 1955

PHYSICAL DESCRIPTION AND CONDITION:

Six to nine sets of mustard gas and lewisite gas canisters, nine inches in length and one inch in width, were buried to an unknown depth in the Dunn Field area of the facility. The approximate location of the unit is 270 feet from the west boundary and 340 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Mustard gas and lewisite gas.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (M-H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary ()	

REFERENCES: 1, 2 and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 2 PHOTO NUMBER: 1-2

NAME: Ammonia Hydroxide Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: July 7, 1955

PHYSICAL DESCRIPTION AND CONDITION:

One seven-pound jug of ammonia hydroxide and a one-gallon bottle of acetic acid were buried to an unknown depth in the Dunn Field area of the facility. The approximate location of the unit is 270 feet from the west boundary and 300 feet from the north boundary of the Dunn Field area. No evidence of releases, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Ammonia hydroxide and acetic acid.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	( )
	Preliminary RFI	(X)
	RFI Necessary	(

REFERENCES: 1, 2 and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 3 PHOTO NUMBER: 1-2

NAME: Mixed Chemical Burial Site A

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: July 24, 1955

PHYSICAL DESCRIPTION AND CONDITION:

Three thousand quarts of unknown chemicals and five cubic feet of ortho-toluidine dihydrochloride were buried to an unknown depth in the Dunn Field area of the facility. The approximate location of the unit is 270 feet from the west boundary and 275 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Unknown chemicals and ortho-toluidine dihydrochloride.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (M-H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	( )

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 4 PHOTO NUMBER: 1-2

NAME: POL Burial Sites

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: April 20, 1955

PHYSICAL DESCRIPTION AND CONDITION:

Forty-five, 55-gallon drums of discarded oil, grease, paints, and thinner were buried to an unknown depth in the Dunn Field area of the facility. The approximate location of the unit is 270 feet from the west boundary and 200 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Waste POLs (petroleum, oils, and lubricants).

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (H) Ground Water (H) Subsurface Gas (H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS: No Further Action () Preliminary RFI (X) RFI Necessary ()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 5 PHOTO NUMBERS: 1-1 and 1-2

NAME: Methyl Bromide Burial Site A

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: April 6, 1955

PHYSICAL DESCRIPTION AND CONDITION:

Three cubic feet of methyl bromide was buried in an unidentified container or containers to an unknown depth in the Dunn Field area of the facility. The approximate location of the unit is 270 feet from the west boundary and 150 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Methyl bromide.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (M-H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 6 PHOTO NUMBER: 1-1

NAME: Eye Ointment Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: November 2, 1955

PHYSICAL DESCRIPTION AND CONDITION:

Forty thousand and thirty-seven N.S.N. units of discarded eye ointment were buried to an unknown depth in the Dunn Field area of the facility. The approximate location of the unit is 85 feet from the north boundary of the Dunn Field area, and 75 feet from the Dunn Field road. (No evidence of release, such as stressed vegetation, was observed at the time of the VSI).

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Discarded eye ointment.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L-M) Ground Water (L-M) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS :	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 7 PHOTO NUMBER: 1-1

NAME: Fuming Nitric Acid Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: February 4, 1954

PHYSICAL DESCRIPTION AND CONDITION:

One thousand, seven hundred bottles of fuming nitric acid were buried to an unknown depth in the Dunn Field area of the facility. The approximate location of the unit is 160 feet from the west boundary and 165 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Nitric acid.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (M-H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 8 PHOTO NUMBER: 1-1

NAME: Methyl Bromide Burial Site B

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: February 4, 1954

PHYSICAL DESCRIPTION AND CONDITION:

Three thousand, seven hundred and sixty-eight one-gallon cans of methyl bromide were buried to a depth of seven feet in the Dunn Field area of the facility. The approximate location of the unit is 90 feet from the north boundary of the Dunn Field area, and 65 feet north of the Fuming Nitric Acid Burial Site (SWMU No. 7). No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Methyl bromide.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (H) Ground Water (H) Subsurface Gas (H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 9 PHOTO NUMBERS: 1-1 and 1-2

NAME: Ashes and Metal Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: November 14, 1955

PHYSICAL DESCRIPTION AND CONDITION:

Ashes and metal refuse from the Former Miscellaneous Burn Site (SWMU No. 24) was buried to an unknown depth in the Dunn Field area of the facility. The unit is an area approximately 240 feet in length and eight feet in width, located 310 feet from the west boundary and 120 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Metal and ashes from the burning of probably waste food and construction debris.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS: No Further Action () Preliminary RFI (X) RFI Necessary ()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 10 PHOTO NUMBERS: 1-1 and 1-3

NAME: Solid Waste Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

This recently discovered burial site was discovered at a depth of 3.5 feet to approximately 10 feet below the surface during the installation of monitoring Well MW-10. The unit is located along the north boundary approximately 35 feet from the west boundary of the Dunn Field area. Soil from the boring was placed near the fence line and eroded off-site during rainfall events at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Miscellaneous waste metal, glass, burned trash, and organic matter.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Organic vapor emissions from the borehole were on the order of 200 ppm during the installation of monitoring well MW-10.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 11 PHOTO NUMBER: No Photo

NAME: Trichloroacetic Acid Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: June 11, 1965

PHYSICAL DESCRIPTION AND CONDITION:

Fourteen hundred and thirty-three one-ounce bottles were buried at a depth of six feet in the Dunn Field area of the facility. The approximate location of the unit is 15 feet from the north boundary and 25 feet west of the Dunn Field Road. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Trichloroacetic acid.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (H) Ground Water (H) Subsurface Gas (H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Various contaminants analyzed from monitoring wells MW-2, 3, and 10, which are located downgradient from SWMU Nos. 1 through 11, contain concentrations greater than background levels for antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. The wells also contained the following volatile organic constituents: 1,1-dichloroethene; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; tetrachloroethene; and trichloroethene. See Appendix D for results.

RECOMMENDATIONS :	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 12 PHOTO NUMBER: 1-14

NAME: Sulfuric and Hydrochloric Acid Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: December 1967

PHYSICAL DESCRIPTION AND CONDITION:

Thirty pallets of discarded acid were buried at a depth of eight feet in the Dunn Field area of the facility. The approximate location of the unit is 35 feet from the west boundary and 30 feet north of the TVA power lines. Three separate burn sites are probable for this unit. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Sulfuric and Hydrochloric Acid.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (M-H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring well MW-12 detected concentrations of barium, chromium, copper, lead, mercury, nickel, silver, and zinc were greater than background levels. Volatile organic constituents present were 1,2-dichloroethylene; 1,1,2,2-tetrachloroethane and trichloroethene. See Appendix D for results.

RECOMMENDATIONS :	No Further Action	(_)
	Preliminary Rri	(A)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 13 PHOTO NUMBERS: 1-4 and 1-13

NAME: Mixed Chemical Burial Site B

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: March 1968 and March 12, 1970

PHYSICAL DESCRIPTION AND CONDITION:

Thirty-two cubic yards, consisting of one hundred and five 100-pound sacks of mixed chemicals and acids were buried at a depth of eight feet in the Dunn Field area of the facility. The unit comprises approximately 15 individual burial sites 50 feet from the west boundary and 340 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Nine sacks of detergent, 70 sacks of aluminum sulfate, two sacks of sodium dichromate, 20 sacks of sodium carbonate, and four sacks of sodium phosphate. Unknown amounts of sodium phosphate, sodium, acid, medical supplies, and lime-chlorinated sodium were also added at a later date.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring wells, MW-5, MW-11, and MW-12 detected concentrations of barium, chromium, copper, lead, mercury, nickel, and zinc were greater than background levels. Volatile organic constituents present were tetrachloroethene and trichloroethene. See Appendix D for results.

RECOMMENDATIONS: No Further Action () Preliminary RFI (X) RFI Necessary ()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 14 PHOTO NUMBERS: 1-4 and 1-14

NAME: Municipal Waste Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

This recently discovered burial site was found at a depth of 6 feet to 18 feet below the surface during the installation of monitoring well MW-12. The unit is located approximately 75 feet from the west boundary of the Dunn Field area and 205 feet south of monitoring well MW-5. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

C-Rations, paper, and cardboard were identified during the installation of monitoring well MW-12.

RELEASE PATHWAYS:

Air (L) Surface Water (L) Soil (H) Ground Water (H) Subsurface Gas (H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring well MW-12 detected concentrations of barium, chromium, copper, lead, mercury, silver, and zinc were greater than background levels. Volatile organic constituents present were 1,1-dichloroethylene; 1,1,2,2-tetrachloroethane and trichloroethene. See Appendix D for results.

RECOMMENDATIONS: No Further Action () Preliminary RFI (X) RFI Necessary ()

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 15 PHOTO NUMBERS: 1-4 and 1-13

NAME: Sodium Burial Sites

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: September 1968

PHYSICAL DESCRIPTION AND CONDITION:

One pallet of sodium and one pallet of sodium phosphate were buried to an unknown depth in the Dunn Field area of the facility. The unit consists of two separate burial sites located 105 feet from the west boundary and 450 feet from the north boundary. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Sodium and sodium phosphate.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring wells, MW-5, MW-11, and MW-12 detected concentrations of barium, chromium, copper, lead, mercury, nickel, and zinc were greater than background levels. Volatile organic constituents present were tetrachloroethene and trichloroethene. See Appendix D for results.

RECOMMENDATIONS :	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 16 PHOTO NUMBERS: 1-4 and 1-13

NAME: Unknown Acid Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: January 1969

PHYSICAL DESCRIPTION AND CONDITION:

One pallet of an unknown acid was buried to an unknown depth in the Dunn Field area of the facility. The unit is located approximately 80 feet from the west boundary and 500 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Discarded, unknown acid.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas

(M)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring wells, MW-5, MW-11, and MW-12 detected concentrations of barium, chromium, copper, lead, mercury, nickel, and zinc were greater than background levels. Volatile organic constituents present were tetrachloroethene and trichloroethene. See Appendix D for results.

RECOMMENDATIONS: No Further Action () Preliminary RFI (X) RFI Necessary ()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 17

PHOTO NUMBERS: 1-4 and 1-13

NAME: Mixed Chemical Burial Site C

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: January 1969

PHYSICAL DESCRIPTION AND CONDITION:

An unknown amount of chemicals and medical supplies were buried to an unknown depth in the Dunn Field area of the facility. No data exist as to whether this debris was placed directly in the ground or containerized. The approximate location of the unit is 115 feet from the west boundary and 500 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Herbicide, cleaning compound, and miscellaneous medical supplies.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (H)

Ground Water (H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring wells, MW-5, MW-11, and MW-12 detected concentrations of barium, chromium, copper, lead, mercury, nickel, and zinc were greater than background levels. Volatile organic constituents present were tetrachloroethene and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	`(X́)
	RFI Necessary	ົ່ບໍ່

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 18 PHOTO NUMBERS: 1-4, 1-5, 1-6, and 1-13

NAME: Plane Crash Residue Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: September 1985

PHYSICAL DESCRIPTION AND CONDITION:

Debris from a plane crash that occurred in the summer of 1985 on the main installation of the facility was buried to an unknown depth. The area is 363 feet in length and 45 feet in width and is located 240 feet from the west boundary and 600 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Military clothing, plastic, cardboard, roofing rock, asphalt roofing, wood, decking, roof trusses, electrical conduit, fittings, sprinkler pipe, and metal.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L)

Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported.

RECOMMENDATIONS: No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 19 PHOTO NUMBER: 1-8 NAME: Former Tear Gas Canisters Burn Site TYPE OF UNIT: Open burning area PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

This open burning area of unknown dimensions was utilized in the central portion of the Dunn Field area of the facility. Discarded tear gas canisters were placed directly on the ground, burned and then buried. The approximate location of the unit is 525 feet from the east boundary and 825 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Smoke pots and tear gas canisters.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (H) Ground Water (H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring wells MW-4 and MW-13 detected concentrations of barium, chromium, lead, mercury, nickel, silver, and zinc were greater than background levels. The volatile organic constituent present was tetrachloroethane. A surface soil sample collected detected very high levels of polynuclear aromatic hydrocarbons which is probably the residue from the burning of oil and other organics. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 20 PHOTO NUMBER: 1-9

NAME: Probable Asphalt Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

As asphalt dumping area of unknown dimensions was utilized in the Dunn Field area of the facility. The approximate location of the unit is 570 feet from the east boundary and 360 feet from the north boundary of the Dunn Field area. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Discarded asphalt.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Ground-water analyses from downgradient monitoring well MW-9 detected concentrations of antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc. Volatile organic constituents ware carbon tetrachloride, tetrachloroethene, and trichloroethene. See Appendix D for results.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project	Name:	DOD Defense	Depot	Date:	January	30,	1990
		Memphis RFA					

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SWMU NUMBER: 21 PHOTO NUMBER: 1-11

NAME: XXCC-3 Probable Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

Two trenches approximately 260 feet in length, 25 feet in width, and of unknown depth were used to discard the unknown material called XXCC-3 Impregnite in the Dunn Field area of the facility. The approximate location is just west of the east boundary and 350 feet from the north boundary. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

The exact use and composition of the material is unknown. However, it is believed that XXCC-3 is either a field testing kit for monitoring chemical exposure or chemical treatment for preserving clothing.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M-H) Ground Water (M-H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 22 PHOTO NUMBER: 1-15

NAME: Hardware Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: May 1977

PHYSICAL DESCRIPTION AND CONDITION:

Three truck loads of discarded nuts and bolts were buried to an unknown depth in the Dunn Field area of the facility. The unit was approximately 40 feet in length and 10 feet in width and is located 1,100 feet from the north boundary of Dunn Field, and 300 feet from the west boundary. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Discarded nuts and bolts.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported.

RECOMMENDATIONS: No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 23 PHOTO NUMBER: 1-16

NAME: Construction Debris and Foods Burial Site

TYPE OF UNIT: Landfill

PERIOD OF OPERATION: 1948

PHYSICAL DESCRIPTION AND CONDITION:

This site of unknown dimensions was used for the disposal of discarded foods and burned construction debris prior to the storage of bauxite after the unit was filled in with soil. The unit is approximately located 175 feet from the west boundary and 1,000 feet from the south boundary of Dunn Field. The area is now used for the storage of fluorspar. No evidence of release, such as stressed vegetation, was observed at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Discarded foods and construction debris.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (M) Ground Water (M) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

There were no metal analyses results reported for monitoring well MW-15. No volatiles were present above detection limits.

RECOMMENDATIONS:	No Further Action*	(X)
	Preliminary RFI	()
	RFI Necessary	()

REFERENCES: 1, 2, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 24 PHOTO NUMBER: 1-17

NAME: Former Miscellaneous Burn Site

TYPE OF UNIT: Open burning area

PERIOD OF OPERATION: 1946

PHYSICAL DESCRIPTION AND CONDITION:

This open burning area of unknown dimensions was utilized near the southwest corner of the Dunn Field area. The approximate location of the unit is 260 feet from the west boundary and 350 feet from the south boundary of Dunn Field. At the time of the VSI the area was being regraded for possible storage of fluorspar and no staining in the soil was evident.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Probably construction debris and other unknown materials.

RELEASE	PATHWAY	(S: )	Air	Historical Present	(H) (L)		Soil	(H)
		c	Groun	nd Water	(H)	Surface	Water	(L)
		٤	Subsu	rface Gas	(L)			
HISTORY	AND/OR	EVIDENCE	e of	RELEASE(S)	:			

No monitoring wells are downgradient from the unit; however, surface soil sample results indicated the presence of polynuclear, aromatic hydrocarbons near the detection limit as a result of burning of organic material.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RPI	(X)
	RFI Necessary	()

REFERENCES: 1, 2, 4 and 26

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 25 PHOTO NUMBER: 1-18

NAME: Golf Course Pond

TYPE OF UNIT: Stormwater Run-Off Pond

PERIOD OF OPERATION: 1940's to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located on the northeast corner of the golf course south of Building 270. The unit consists of an unlined manmade pond approximately 75 feet wide and 125 feet long with an earthen dam. The unit receives run-off from the golf course and the east-central portion of the main installation.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Surface water samples from the pond contained low levels of barium up to 14 ug/1, zinc up to 22 ug/1, and copper up to 40 ug/1. Sediment samples from the bottom of the pond contained DDD, 3,000 ug/1; DDT, 4,000 ug/1; low levels of polynuclear aromatic hydrocarbons (PAHs); low levels of heavy metals including lead at 91 ug/kg; and mercury at 0.06 ug/kg. Samples of tissue taken from fish in the pond contained low levels of pesticides and PCBs.

RELEASE PATHWAYS: Air (L) Surface Water (H) Soil (H) Ground Water (H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Sediment samples from the pond bottom identified hazardous constituents indicating a release to the soil beneath the pond. A surface water sample collected from the Golf Course Pond Outlet Ditch (AOC C), approximately 700 feet south (downstream) from the pond contained barium at 26 ug/l, copper at 25 ug/l and zinc at 81 ug/l, and trace amounts of DDE and DDT\* up to .27 ug/l. The outfall ditch was dry during the VSI.

RECOMMENDATIONS :	No Further Action	()
	Preliminary RFI	()
	<b>RFI Necessary</b>	(X)

REFERENCES: 1, 3, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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#### SWMU DATA SHEET Page 26 of 60 PHOTO NUMBER: 1-20

SWMU NUMBER: 26

NAME: Lake Danielson

TYPE OF UNIT: Stormwater Run-Off Pond and Reservoir for Fire fighting

PERIOD OF OPERATION: 1940's to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in the northwest corner of the golf course, just east of Buildings 470 and 489. The unit consists of an unlined manmade pond approximately 4 acres in size and 15 feet deep at the deepest point. The unit receives run-off from the central portion of the facility. Water flows out of the unit through a drop pipe to the Lake Danielson Outlet Ditch (AOC B).

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Surface water samples from the pond contained low levels of arsenic up to 48 ug/l, copper up to 24 ug/l, zinc up to 68 ug/l, and a trace amount of 4,4' DDE 0.21 ug/l. Sediment samples from the bottom of the unit contained low levels of metals including mercury, 0.05 ug/l; zinc, 51 ug/l; 4,4' DDE, 110 ug/l; and 4,4' DDD, 47 ug/l. Samples of tissue taken from fish in the pond contained low levels of pesticides and PCBs.

RELEASE PATHWAYS: Air (L) Surface Water (H) Soil (H) Ground Water (H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Sediments samples from the lake identified hazardous constituents which indicate a release to the soil beneath the lake. There has been no analytical testing performed on the water which is discharged from the unit. The unit discharges as it fills up with surface run-off. The outfall area was dry during the visual site inspection. Ground-Water Monitoring Well MW-25, which is located about 75 feet south of the pond, contains concentrations greater than background levels of the following metals: barium, chromium, copper, lead, mercury, nickel, and zinc. The well also contains a low level of tetrachloroethylene.

RECOMMENDATIONS: No Further Action () Preliminary RFI () RFI Necessary (X)

REFERENCES: 1, 3, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA SWMU NUMBER: 27

### Page 27 of 60 PHOTO NUMBERS: 1-23 and 1-24

NAME: Former Recoup Area

TYPE OF UNIT: Former Hazardous Material and Hazardous Waste Handling Area

PERIOD OF OPERATION: 1940's to 1985

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located at the southeast corner of Building S-873, which is in the southwest portion of the main installation. Building S-873 is an open-sided, metal-roofed shed which is currently used for POL storage. In the past, the southeast corner of the building and the gravel parking area to the east were used as the area for repackaging damaged and leaking containers of hazardous and non-hazardous materials. The dimensions of the unit are unknown.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Unknown, however, a wide variety of both hazardous and non-hazardous solids and liquids were handled at the site. Some remediation has been performed at this unit. DDE, DDT, and Aldrin contaminated soil has been removed from the area.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (H) Ground Water (H) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Surface soil samples collected in the vicinity of the former unit contain low levels of antimony, arsenic, chromium, copper, lead, nickel, and zinc. All concentrations fall within the range found in naturally occurring soils. Ground-Water Monitoring Well MW-23, which may be downgradient from the unit, contains concentrations greater than background of the following metals: barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc. There were no volatile organics detected greater than background levels. See Appendix D for results.

RECOMMENDATIONS:	No Further Action Preliminary RFI	()
	RFI Necessary	(X)

REFERENCES: 1, 3, and 21

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 28 PHOTO NUMBERS: 1-25, 1-26 and 1-27

NAME: Recoup Area Building

TYPE OF UNIT: Hazardous Materials and Waste Handling Area

PERIOD OF OPERATION: 1986 to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in Building 865 which is in the west-central portion of the main installation. The building is concrete block construction with a poured concrete floor that has a chemical-resistant coating. All of the hazardous materials-handling areas are bermed to contain spills. The purpose of the unit is to store damaged or leaking containers of hazardous materials. There are separate bays for each waste type, until they can be repackaged as a product or waste. The repackaging is also performed in the "work room" at the unit.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

A wide variety of hazardous materials or wastes are handled at the DDMT facility.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

There was no evidence of leaks or spills noted during the VSI. RECOMMENDATIONS: No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 29 PHOTO NUMBER: 1-28

NAME: Former Underground Waste Oil Storage Tank

TYPE OF UNIT: Waste Collection Unit

PERIOD OF OPERATION: Unknown, probably 1940's to 1950's

PHYSICAL DESCRIPTION AND CONDITION:

According to the facility representative, the unit is reported to be located near the northeast corner of B-1086. There is no information available about the size of the unit or its exact location. The unit was part of a former vehicle grease rack and was probably used to hold waste engine oil from vehicles. The DDMT has made some effort to find the tank but has been unsuccessful.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Waste (used) motor oil and lubricants.

RELEASE	PATHWAYS:	Air (L)	Surface	a Water	(L)
		Ground Water	Past	(H)	• •
		Present (U)			
		Soil Past (H)			
		Present (H)			
		Subsurface Gas	Past	(H)	
			Present	(U)	

HISTORY AND/OR EVIDENCE OF RELEASE(S):

No information is available about the location of the unit or if any releases have occurred.

RECOMMENDATIONS: No Further Action ( ) Preliminary RFI (X) RFI Necessary ( )

REFERENCES: 1 and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 30 2-16 and 3-5

PHOTO NUMBERS: 1-29,

Paint Spray Booths (3) NAME :

Paint Filters TYPE OF UNIT:

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

The filters are located on the back or side walls of the three paint booths. The paint booths are located inside Buildings 1086, 770 and 260. The filter area varies from 8 feet wide by 10 feet tall in B-770, to 24 feet wide by 10 feet tall in B-260. Paint from spraying operations passes through the filters as a result of forced air caused by a fan and vent system located on the opposite side of the filter. Discarded filters are placed in dumpsters and discarded as non-hazardous The units appeared to be in good condition at the time waste. of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Paint from spraying operations.

**RELEASE PATHWAYS;** 

Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported.

No Further Action (X) RECOMMENDATIONS: Preliminary RFI () **RFI Necessary** 

**REFERENCES:** 1

DOD Defense Depot Project Name: Date: January 30, 1990 Memphis RFA

### SWMU DATA SHEET Page 31 of 60

SWMU NUMBER: 31 PHOTO NUMBER: 1-30

NAME: Former Paint Spray Booth

TYPE OF UNIT: Both a water wash and dry paint filter operation

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

The filter area was located on the backwall of the spray booth in Building 1087. Building 1087 is at the southwest corner of the main installation. A typical water wash system has a water tank from which water is pumped to filter bags and used to remove paint from the air as it blows through the filters. The water is usually recirculated for a period of time and then disposed. The disposition of wastewater from this SWMU is unknown. The unit is currently used to store freshly painted equipment until it was dry.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Waste water from paint and spraying operations.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (N) Ground Water (U) Subsurface Gas (U)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

The history or evidence of release is not known due to unknown disposal practices for wastewater from the water wash system.

RECOMMENDATIONS:

No Further Action () Preliminary RFI (X) RFI Necessary ()

REFERENCES: 1 and 21

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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### SWMU DATA SHEET Page 32 of 60

SWMU NUMBER: 32 PHOTO NUMBER: 1-31

NAME: Sandblasting Waste Accumulation Area

TYPE OF UNIT: Waste Collection Area

PERIOD OF OPERATION: Unknown; sandblasting has occurred since the 1940's.

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in the southeastern corner of the main installation, adjacent to Building 1088 (sandblasting area). The unit consists of a corrugated steel shed with a gravel floor. There are three hoppers which collect the dust from sandblasting operations and direct it into 55-gallon drums. The drums are open and rest on wood pallets. When the drums are full, they are placed in the Sandblasting Drum Storage Area (SWMU No. 33) until the wastes are analyzed for EP Toxic metals and disposed of offsite. Prior to the use of B-1088 and the Hopper System, sandblasting operations were performed on the open ground in the general vicinity of B-1087.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Sandblasting grit, paint chips and possibly E.P. Toxic metals

RELEASE PATHWAYS: Air (L-M) Surface Water (L) Soil (H) Ground Water (M) Subsurface Gas (N)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

No evidence of releases or spills were noted on the floor beneath the drums during the VSI. A soil sample collected beneath the drum area contained elevated levels of heavy metals and pesticides. Surface soil samples collected adjacent to Building 1087 contained extremely high levels of heavy metals. Concentrations of chromium up to 8,680 mg/kg, lead up to 17,500 mg/kg, and zinc up to 22,100 mg/kg. Pesticides and herbicides were detected up to 7,400 mg/kg. Facility representatives could not provide further information regarding possible sources of pesticides.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	( )
	RFI Necessary	(X)

REFERENCES: 1 and 21

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 33 PHOTO NUMBER: 1-32

NAME: Sandblasting Waste Drum Storage Area

TYPE OF UNIT: Waste Accumulation Area

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located just south of Building B-1088 (sandblasting area) in the southwest corner of the main installation. The unit consists of an open-sided, metal roof shed with a gravel floor. There are approximately 33 drums currently stored at the unit. The drums are stacked in a double high row approximately 25 feet long and 4 feet wide. The drums are sealed and rest on pallets with another set of pallets between the rows. The drums have been accumulating for approximately two years. The waste will be analyzed for EP Toxic metals and disposed of off-site. All drums appeared to be in good condition at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Sandblasting grit, paint chips, and possibly E.P. toxic metals.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (N)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported.

RECOMMENDATIONS: No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 34 PHOTO NUMBER: 1-33

NAME: Building 770 Underground Waste Oil Storage Tanks (2)

TYPE OF UNIT: Underground Waste Oil Storage Tank

PERIOD OF OPERATION: Unknown

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in the vehicle maintenance shop, which is located in the west central area of the main installation. The unit consists of two 1,000-gallon steel tanks which were used to store waste motor oil from vehicles. The disposition of the waste oil is unknown.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Waste motor oil and lubricants.

RELEASE PATHWAYS: Air (L-M) Surface Water (M) Soil (H) Ground Water (H) Subsurface Gas (H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

There is no history of releases from the tank itself. However, there is an extensive amount of stained soil on the ground surface adjacent to the fill hole of the tank. There are no ground-water monitoring wells associated with this unit.

**REFERENCES:** 

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 35 PHOTO NUMBER: 2-1, 2-9

NAME: DRMO Building T-308 Hazardous Waste Storage Area

TYPE OF UNIT: Hazardous Waste Storage Area

PERIOD OF OPERATION: From as late as 1966 to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located along the north side of the main installation. The unit consists of a wood frame, tin sided and roofed building which is approximately 90 feet long and 40 feet wide. The unit has an unlined concrete floor and a 2-foot high concrete berm/foundation on all sides, except the two doors, which have 3-inch concrete or asphalt dikes across them. Wastes are stored on pallets and separated by waste type, although no berms exist between the different wastes. The concrete floor contained several long stress cracks. Storm water run-off from this unit flows toward the DRMO Drainage Ditch (AOC E) and the North Run-Off Area (AOC F).

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Flammables, caustics, acids.

RELEASE PATHWAYS: Air (L-M) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

There was no evidence of leaks or spills at the time of the VSI. There are no soil analyses or monitoring wells near this unit.

RECOMMENDATIONS: No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 36 PHOTO NUMBER: 2-2

NAME: DRMO Hazardous Waste Concrete Storage Pad

TYPE OF UNIT: Storage Area

PERIOD OF OPERATION: From as late as 1966 to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located along the north edge of the main installation, just west of Building T-308. The unit consists of a concrete pad which is approximately 300 feet along and 60 feet wide. The concrete is uncoated and does not have a berm at the edge. The pad is used to store drums of hazardous waste or expired shelf-life hazardous materials until they are sold or can be disposed offsite. Wastes requiring disposal are sent to the Chemical Waste Management facility in Emelle, Alabama. The drums are stored on pallets and covered with canvas which is held down by wood pallets.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

The unit manages a wide variety of hazardous wastes and expired shelf life hazardous materials.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

The only visual evidence of a release was a small area of stained concrete noted during the VSI. A surface soil sample collected from a drainage ditch adjacent to the unit contained low levels of metals within the range found in naturally occurring soils.

RECOMMENDATIONS:	No Further Action (X)	I
	Preliminary RFI ()	I
	RFI Necessary ( )	

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 37

PHOTO NUMBER: 2-3

NAME: DRMO Hazardous Waste Gravel Storage Pad

TYPE OF UNIT: Storage Area

PERIOD OF OPERATION: From as late as 1966 to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located along the northern boundary of the main installation, west of Building T-308. The current size of the area is approximately 800 feet long by 200 feet wide. The extent of the unit in the past is unknown but probably varied greatly. The unit is a flat, graveled area consisting of rows of drums on pallets. The wastes are brought to the unit from the supply depot and other federal facilities. The wastes are separated by type and are stored until they can be sold or properly manifested and shipped to the Chemical Waste Management facility in Emelle, Alabama.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

The unit manages a wide variety of hazardous wastes or expired shelf life hazardous materials.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported.

RECOMMENDATIONS: No Further Action () Preliminary RFI (X) RFI Necessary ()

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 38 PHOTO NUMBER: 2-4

DRMO Damaged and Empty Hazardous Materials Drum NAME : Area

TYPE OF UNIT: Storage area

PERIOD OF OPERATION: Unknown to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located along the north edge of the main installation. The unit consists of empty drums which may contain hazardous residues that are stored on pallets on gravel. The drums had contained hazardous materials when they were damaged. The damaged drums were taken to the Recoup Area Building (SWMU No. 27) where they were emptied into new containers. The damaged drums (which may contain hazardous residues) were then stored at this unit. They will be stored here until they can be properly manifested and shipped to the Chemical Waste Management facility in Emelle, Alabama for disposal.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

The unit manages various hazardous solids and liquid residues in empty drums.

**RELEASE PATHWAYS:** Air (M) Surface Water (L-M) Soil (H) Ground Water (H) Subsurface Gas (M-H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

There are several areas of stained soil adjacent to the unit.

 $(\mathbf{X})$ 

RECOMMENDATIONS: No Further Action ( ) Preliminary RFI RFI Necessary

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 39

PHOTO NUMBERS: 2-5 and 2-6

NAME: DRMO Damaged and Empty Lubricant Container Area

TYPE OF UNIT: Storage area

PERIOD OF OPERATION: Unknown to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located along the north boundary of the main installation, adjacent to the hazardous DRMO Waste Gravel Storage Pad (SWMU No. 37). The unit has two different areas separated by approximately 30 yards. The first area consists of damaged lubricant containers in a variety of sizes which are stored on pallets on the gravel pad. The containers are partially covered by canvas. The containers are brought to the unit after they have been damaged and stored there until they can be sold or disposed of properly. The second area is used to store empty barrels of oil. The empty barrels are sold for reclamation.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

The unit manages motor oil, grease, and hydraulic fluid.

RELEASE PATHWAYS: Air (M) Surface Water (L-M) Soil (H) Ground Water (H) Subsurface Gas (M-H)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Many of the damaged containers in the first area are in cardboard boxes. Several of the cardboard boxes show extensive oil stains, and there is some staining of the gravel. In the past, empty oil drums have been stored upside down to prevent filling with rain water. Oil residue has leaked out and several areas of stained gravel were noted during the VSI.

RECOMMENDATIONS: No Further Action ( ) Preliminary RFI (X) RFI Necessary ( )

REFERENCES: 1 and 7

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA 3 - 39

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SWMU NUMBER: 40

PHOTO NUMBERS: 2-12 and 2-13

NAME: Safety-Kleen Units (9)

TYPE OF UNIT: Solvent Farts Cleaning Stations

PERIOD OF OPERATION: 1985 to present

PHYSICAL DESCRIPTION AND CONDITION:

The units consists of steel holding tanks, supported by steel legs of variable size, ranging from 20 to 40 gallons in volume, and all of which are located in buildings.\* All tanks are self-contained, and spent solvent is recirculated before periodic replacement. The units are leased and maintained by the Safety-Kleen Corporation. Two units were observed during the VSI, and they appeared to be of good integrity.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Safety-Kleen's carburetor and cold part cleaner 609 contain 11.9% cresylic acids, 31.7% methylene chloride, and 81.3% ortho-di-chlorobenzene

RELEASE PATHWAYS:

Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None Reported.

RECOMMENDATIONS:

No Further Action (X) Preliminary RFI ( ) RFI Necessary ( )

REFERENCES:

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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# <u>Table 3-1</u>

# LOCATION OF SAFETY-KLEEN UNITS BY BUILDING AT DOD MEMPHIS

Building Number

<u>Number of Units</u>

770	5
490	1
253	1
409	T

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SWMU NUMBER: 41 PHOTO NUMBERS: 2-14, 2-15, 2-23, 3-3, and 3-4

NAME: Satellite Drum Accumulation Areas (5)

TYPE OF UNIT: Satellite Drum Storage Area

PERIOD OF OPERATION: 1985 to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit consists of a number of variable size drums used to collect discarded wastes in four different areas of the facility.\* Two of the units are in the same building. All wastes collected in these areas are transported to the DRMO, prior to off-site disposal. All units are located on a concrete floor within a building. All drums appeared to be of good integrity during the VSI, but the unit in the Sign Shop (Building 260) was very sloppy and requires better waste handling practices.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

The unit manages waste solvents, waste paint, paint thinner, solvent rags, sulfuric acid, and empty product containers.

RELEASE PATHWAYS:

Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Spillage on the floor of the Sign Shop (Building 260) was evident during the VSI.

RECOMMENDATIONS:

No Further Action (X) Preliminary RFI ( ) RFI Necessary ( )

REFERENCES: 1 and 2

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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# <u>Table 3-2</u>

# LOCATION OF SATELLITE DRUM ACCUMULATION AREAS AT DOD MEMPHIS

<u>Number of Units</u>	<u>Waste</u>
2	Solvent rags, waste solvent
1	Sulfuric acid
1	Waste solvents, empty product containers, solvent rags
1	Waste paint, paint thinner, solvent rags
	<u>Number of Units</u> 2 1 1 1

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### SWMU DATA SHEET Page 44 of 60

SWMU NUMBER: 42

PHOTO NUMBER: 2-17

NAME: Former PCP Dip Vat Area

TYPE OF UNIT: Above-Ground Tank

PERIOD OF OPERATION: 1942 until late 1970's; peak operation 1965

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in the northwest portion of the main installation, adjacent to Building S-737. The unit consisted of a large, open-top tank which contained a Pentachlorophenol (PCP) solution used to treat (preserve) wood pallets. The pallets were dipped into the tank, then removed and placed into a Drip tank which was part of the unit. The pallets were allowed to drip dry in the Drip Tank for a short period of time. Material in the Drip Tank drained back into the Vat.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Pentachlorophenol (PCP), dioxins, and furans which are in PCP.

RELEASE PATHWAYS: Soil (H) Ground Water (H) Subsurface Gas (M)

Air	Historical	(H)
	Present	(U)
Surface Water	: Historical	(H)
	Present	(L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Soil samples from beneath the unit collected in 1985 contained high levels of dioxins and furans. The Dip Vat and metal building were removed in 1986, and the Dip Vat was decontaminated. The soil around the unit was excavated to a depth of 10 feet. The contaminated soil was placed in roll-off containers and drums and stored at the Former Contaminated Soil Staging Area (SWMU No. 4) and the Former Contaminated Soil Drum Storage Area (SWMU No. 4). Contaminant levels greater than 200 ppb still exist in the soil beneath the excavated area. A verbal agreement was made by the U.S. Army and the Tennessee Department of Health and Environment to leave the remaining contaminated soil in place. Consequently, the excavation was backfilled with clean soil and capped with gravel or concrete.

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**RECOMMENDATIONS:** 

() (X) No Further Action Preliminary RFI RFI Necessary ()

REFERENCES: 1, 4, and 11

Project Name: DOD Defense Depot Memphis RFA

Date: January 30, 1990

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SWMU NUMBER: 43

PHOTO NUMBER: 2-18

NAME: Former Underground PCP Tank Area

TYPE OF UNIT: Underground Storage Tank

PERIOD OF OPERATION: 1942 until 1985

PHYSICAL DESCRIPTION AND CONDITION:

The unit was located just south of Building 737. The unit consisted of an underground, steel tank of unknown capacity, which was used to store PCP until it was needed in the Dip Vat. The material was then pumped to the Dip Vat.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Pentachlorophenol (PCP) which contains dioxins and furans.

RELEASE PATHWAYS:	Air (L)	Surface	Water (L)	Soil (	(H)
	Ground Wate	ər (H)	Subsurf	ace Gas (	(M)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Soil samples adjacent to the unit collected in 1985 contained high levels of dioxins and furans. The tank was brought above ground in 1986 and drained into drums. The soil around the unit was removed to a depth of 10 feet, and the pump and lines were removed. The contaminated soil was placed in roll-off containers and drums and stored at the Former Contaminated Soil Staging Area (SWMU No. 4) and the Former Contaminated Soil Drum Storage Area (SWMU No. 47). Contaminant levels greater than 200 ppb still exist beneath the excavated area. A verbal agreement was made by the U.S. Army and the Tennessee Department of Health and Environment to leave the remaining contaminated soil in place. Consequently, the excavation was backfilled with clean soil and capped with gravel or concrete.

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 4, and 11

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 44 PHOTO NUMBER: 2-20

NAME: Former Wastewater Treatment Unit Area

TYPE OF UNIT: Temporary Wastewater Treatment Unit

PERIOD OF OPERATION: 1986

PHYSICAL DESCRIPTION AND CONDITION:

The unit was located just west of Building S-737. The unit consisted of drums of activated carbon used as a final treatment for rainwater mixed with PCP-contaminated oil which had accumulated in the Dip Vat, rinsewaters from equipment decontamination, and from clean-up operations of the pesticide shop. No staining of the soil was evident at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

PCP oil, dioxins and furans mixed with rainwater.

RELEASE	PATHWAYS:	Air (	L)	Surface	Water	(L)	Soil	(L)	)
		Groun	d Wate	r (L)	S	lubsu	rface Gas	$(\mathbf{L})$	)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported. Soil samples, taken to a depth of 12 inches and 18 inches below the unit after use, indicated no contamination.

RECOMMENDATIONS: No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1, 4, 11, 21 and 23

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 45 PHOTO NUMBER: 2-19

NAME: Former Contaminated Soil Staging Area

TYPE OF UNIT: Temporary Waste Storage Area

PERIOD OF OPERATION: 1986 to 1988

PHYSICAL DESCRIPTION AND CONDITION:

The unit was located to the northwest of Building S-737. The unit consisted of a gravel area approximately 200 feet by 100 feet. There were 39 roll-off containers with a capacity of 24 to 30 cubic yards resting on the gravel. The containers were filled with contaminated soil and were staged in this area until a disposal site could be found. The roll-offs were removed to an approved hazardous waste disposal area in 1988. The roll-offs were covered and lined with plastic, and the seams were filled with a foam material. No staining of the underlying soil was evident at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

PCP, dioxins and furan-contaminated soil.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported. Soil samples, taken to a depth of 12 inches and 18 inches below the unit after use, indicated no contamination.

RECOMMENDATIONS: No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1, 4, 11, 21 and 23

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

## SWMU DATA SHEET Page 49 of 60

SWMU NUMBER: 46

PHOTO NUMBER: 2-21

NAME: Former PCP Drying Area

TYPE OF UNIT: Treated Wood Pallet Staging Area

PERIOD OF OPERATION: 1942 to 1985

PHYSICAL DESCRIPTION AND CONDITION:

The unit was located approximately 200 feet north of Building S-737. The unit consisted of a flat gravel area of about 3.5 acres which was used as a drying area for wood pallets that had been treated with PCP. The Tennessee Department of Health and Environment allowed the area to be covered with gravel, and no sampling was considered necessary.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Pentachlorophenol (PCP) which contains dioxins and furans.

RELEASE PATHWAYS: Air (M-H) Surface Water (M) Soil (H) Ground Water (H) Subsurface Gas (M)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

No evidence of a release to soil was visible because of the presence of an 8-inch to 12-inch gravel cover.

RECOMMENDATIONS :	No Further Action	()
	Preliminary RFI	$(\mathbf{X})$
	RFI Necessary	()

REFERENCES: 1, 4, 11, 21 and 23

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 47

PHOTO NUMBER: 3-9

NAME: Former Contaminated Soil Drum Storage Area

TYPE OF UNIT: Storage Area

PERIOD OF OPERATION: 1986 to 1988

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in the southwest part of the main installation, approximately 300 feet west of building 689. The unit consists of a dirt-covered concrete igloo building normally used for explosive storage. The unit has a concrete floor and all of the drainage areas are sealed. The unit was used to store approximately 800 drums of soil containing FCP sludges, and contaminated carbon from the cleanup operations at the Former PCP Dip Vat Area (SWMU No. 42). The wastes were removed to an approved hazardous waste disposal facility in the Spring of 1988.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

PCP sludges containing dioxins and furans; contaminated activated carbon.

RELEASE PATHWAYS:	Air (L)	Surface	Water (L)	Soil	(L)
	Ground Wate:	r (L)	Subsurf	ace Gas	(L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported.

**RECOMMENDATIONS:** 

No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1 and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: 48 PHOTO NUMBER: 3-6

NAME: Former PCB Transformer Storage Area

TYPE OF UNIT: Storage

PERIOD OF OPERATION: Unknown, but the drums were removed prior to construction of the new cafeteria.

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located just north of the golf course and east of Building S-360. The new cafeteria is located on the site and reportedly constructed within the last few years. The unit was used to store two electrical transformers containing oil which had less than 50 ppm of PCBs.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

PCB-contaminated oil, less than 50 ppm.

RELEASE PATHWAYS: Air (L) Surface Water (L) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Samples of fish tissue taken from Lake Danielson (SWMU No. 26) and the Golf Course Pond (SWMU No. 25), which are immediately downgradient of the unit, contained levels of PCB up to 2.84 mg/kg. However, PCBs were not detected in two soil samples collected in 1988 adjacent to this unit during the Remedial investigation (RI).

RECOMMENDATIONS:	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1, 3, and 4

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

## SWMU DATA SHEET Page 52 of 60

SWMU NUMBER: 49

PHOTO NUMBERS: 3-7 and 3-8

NAME: Medical Waste Storage Area

TYPE OF UNIT: Warehouse Storage

PERIOD OF OPERATION: Unknown to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located near the center of Building 359. The unit consists of a concrete-floored storage bay measuring approximately 50 feet long and 30 feet wide in size. Expired shelf life medical supplies are stored in the manufacturers containers on pallets or shelves throughout the unit. Liquid material is normally sent to the sanitary sewer with permission of the sewer authority. Solid material is normally crushed and sent to the sanitary sewer or taken offsite for incineration or disposal.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Expired shelf life medical supplies.

RELEASE	PATHWAYS:	Air (L)	Surface	Water (L)	Soil	(L)
		Ground Wa	ter (L)	Subsur	face Gas	(L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None reported. No evidence of spills or leaks were noted during the VSI.

RECOMMENDATIONS:

No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: AOC A PHOTO NUMBER: 1-10

NAME: Dunn Field Drainage Ditch

TYPE OF UNIT: Stormwater run-off channel

PERIOD OF OPERATION: 1940's to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in the Dunn Field area of the facility intersecting the eastern half of the area. The unit is a three-foot wide and two-foot deep concrete channel running south to north, a distance of approximately 1,000 feet. The unit appeared to be in good condition at the time of the VSI with no water present.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Rainwater run-off flows in the channel during periods of precipitation; however, an unknown leachate was seen flowing in the unit near the Pistol Range in April 1989.

RELEASE PATHWAYS:

Air (L) Surface Water (M) Ground Water (L) Sub

M) Soil (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

A leachate originating from an unknown source was seen flowing into the unit near the facility Pistol Range in April 1989. There was no evidence of leachate identified during the VSI.

RECOMMENDATIONS:

No Further Action ( ) Preliminary RFI (X) RFI Necessary ( )

REFERENCES: 1, 4, and 26

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

### SWMU DATA SHEET Page 54 of 60

SWMU NUMBER: AOC B PHOTO NUMBER: 1-21

NAME: Lake Danielson Outlet Ditch

TYPE OF UNIT: Stormwater run-off channel

PERIOD OF OPERATION: 1940's to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located at the golf course in the southeast corner of the main installation. The unit receives run-off from Lake Danielson (SWMU No. 26) when run-off raises the lake so that it overflows. The unit consists of a concrete-lined channel approximately three feet wide and two feet deep which expands to five feet wide about halfway down its length. The channel runs approximately 400 feet from the lake south to the facility boundary. The unit also receives drainage directly from other areas of the golf course.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Samples of water and sediments from Lake Danielson (SWMU No. 20) contained low levels of heavy metals plus DDE and PCBs. Water from the lake discharges to this unit as the lake fills up with stormwater.

RELEASE PATHWAYS: Air (L) Surface Water (M) Soil (M) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

There has been no analytical testing performed on the water which is discharged into the ditch. The ditch was dry at the time of the VSI.

RECOMMENDATIONS :	No Further Action	()
	Preliminary RFI	$\infty$
	RFI Necessary	()

**REFERENCES:** 1 and 4

Project N	ame: DOD	Defense	Depot	Date:	January	30,	1990
_	Memp	his RFA	_		_	-	

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SWMU NUMBER: AOC C

PHOTO NUMBER: No Photograph Available

NAME : Golf Course Pond Outlet Ditch

TYPE OF UNIT: Stormwater run-off channel

PERIOD OF OPERATION: 1940's to present

PHYSICAL DESCRIPTION AND CONDITION:

This unit is located on the golf course in the southeast corner of the main installation. The unit consists of a concrete-lined channel, approximately three feet wide and two feet deep. The unit receives overflow from the Golf Course Pond (SWMU No. 25) and surface run-off directly from the golf course. The unit runs from the pond south approximately 700 feet to the facility boundary.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Samples of water and sediment from the Golf Course Pond contain low levels of heavy metals plus trace amounts of DDE and DDT. Water from the pond discharges to this unit as the pond fills up with surface run-off.

RELEASE PATHWAYS:	Air (L)	Surface	Water (M)	Soil	(L)
	Ground Wat	er (L)	Subsur	face Gas	(L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

A surface water sample collected from the channel near the facility boundary contained 81 ppb of zinc and trace amounts of DDE and DDT, up to 0.27 ug/1.

RECOMMENDATIONS :	No Further Action	()
	Preliminary RFI	(X)
	RFI Necessary	()

REFERENCES: 1 and 4

Project Name: DOD Defense Depot January 30, 1990 Date: Memphis RFA

### SWMU DATA SHEET Page 56 of 60

SWMU NUMBER: AOC D PHOTO NUMBER: 1-22

NAME: X-25 Flammable Solvents Storage Area

TYPE OF UNIT: Product Storage Area Spill

PERIOD OF OPERATION: January 18, 1988

PHYSICAL DESCRIPTION AND CONDITION:

A product spill occurred in the northernmost POL concrete, bermed storage area located in the northwest section of the main installation. The area measures approximately 175 feet in length and 125 feet in width with a concrete floor that slopes to the south. No evidence of soil staining was evident near the unit at the time of the VS1.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Highly-flammable solvents, xylene, toluene.

RELEASE	PATHWAYS:	Air (L)	Surface	Water (L)	Soil	(L)
		Ground Wat	er (L)	Subsur	face Gas	(L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

A 36,000-gallon product spill occurred on January 19, 1988. At the time of the VSI, there was no evidence of soil staining near the unit.

RECOMMENDATIONS:

No Further Action (X) Preliminary RFI () RFI Necessary ()

REFERENCES: 1 and 9

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: AOC E PHOTO NUMBERS: 2-7 and 2-8

NAME: DRMO Drainage Ditch

TYPE OF UNIT: Drainage Ditch

PERIOD OF OPERATION: Unknown start-up date to present

PHYSICAL DESCRIPTION AND CONDITION:

This unit is a concrete-lined, open channel, which measures two feet deep and two feet wide and is located east of the DRMO. The unit was dry and no stressed vegetation was visible above the channel at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

This ditch accepts surface water run-off from the DRMO Building T-308 Hazardous Waste Storage Area (SWMU No. 35) which manages flammables, caustics and acids.

RELEASE PATHWAYS:	Air (L)	Surface	Water (M-H)	Soil (	L)
	Ground Wa	ter (L)	Subsurfa	ice Gas (	L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Run-off occurs from the DRMO Building T-308 Hazardous Waste Storage Area to this unit during rainfall events.

**RECOMMENDATIONS:** 

No Further Action (X) Preliminary RFI ( ) RFI Necessary ( )

REFERENCES: 1 and 2

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: AOC F PHOTO NUMBER: 2-10

NAME : North Run-Off Area

Surface Run-Off Area TYPE OF UNIT:

PERIOD OF OPERATION: 1940's to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is a located along the northern boundary of the main installation. The unit consists of an area which is approximately 100 feet across, through which run-off (as sheet flow) discharges from the facility. No stressed vegetation was visible at this unit at the time of the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

This discharge point accepts run-off from the DRMO Building T-308 Hazardous Waste Storage Area (SWMU No. 35).

RELEASE F	PATHWAYS:	Air (L	) Su	rface	Water	(L-M)	Soil	(L)
		Ground	Water	(L)		Subsurface	Gas	(L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Run-off occurs from the DRMO Building T-308 Hazardous Waste Storage Area to this unit during rainfall events.

RECOMMENDATIONS:	No Further Action ()	S)
	Preliminary RFI (	Ĵ
	RFI Necessary (	)

REFERENCES: 1 and 2

DOD Defense Depot Project Name: Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: AOC G PHOTO NUMBER: 2~11

NAME: West Run-Off Area

TYPE OF UNIT: Drainage Ditch

PERIOD OF OPERATION: 1940's to present

PHYSICAL DESCRIPTION AND CONDITION:

The unit is located in the middle of the west boundary of the main installation. The unit is a natural ditch which is approximately seven feet deep and six feet wide. The unit accepts run-off from the entire west side of the facility and discharges to the west beneath Perry Road.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

This ditch accepts run-off from various storage areas of POL located on the west side of the facility.

RELEASE PATHWAYS: Air (L) Surface Water (L-M) Soil (L) Ground Water (L) Subsurface Gas (L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

None, a surface water sample taken from the ditch indicated no contamination.

RECOMMENDATIONS: No Further Action (X) Preliminary RFI (). RFI Necessary ()

REFERENCES: 1, 2, and 26

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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SWMU NUMBER: ACC H PHOTO NUMBER: 2-22

NAME: Building 629 Spill Area

TYPE OF UNIT: Loading Dock Spill

PERIOD OF OPERATION: Probably sometime in 1988

PHYSICAL DESCRIPTION AND CONDITION:

This unit is a rail-loading dock measuring approximately 125 feet in length, located near the southwest corner of Building 529 which is the main hazardous material storage building at the facility. The area is graveled so no evidence of soil staining was visible during the VSI.

WASTES AND/OR HAZARDOUS CONSTITUENTS MANAGED:

Herbicides and pesticides in two to five-gallon containers.

RELEASE PATHWA	AYS: Air (1	L) Sur	face Water	(M) 5	oil (	(H)
	Ground	d Water (	H) S	Subsurface	Gas (	(L)

HISTORY AND/OR EVIDENCE OF RELEASE(S):

Surface soil samples collected at the southwest corner of Building 629 contained levels of pesticides and herbicides up to 59,000 ug/kg, and polynuclear aromatic hydrocarbons up to 280,000 ug/kg.

RECOMMENDATIONS:

No Further Action ( ) Preliminary RFI ( ) RFI Necessary (X)

REFERENCES: 1 and 26

Project Name: DOD Defense Depot Date: January 30, 1990 Memphis RFA

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IV. SUMMARY

#### <u>Table 4-1</u>

#### List of All SWMUs and AOCs

1. Mustard Gas Burial Site Ammonia Hydroxide Burial Site 2. Mixed Chemical Burial Site A 3. 4. POL Burial Sites 5. Methyl Bromide Burial Site A Eye Ointment Burial Site б. 7. Fuming Nitric Acid Burial Site 8. Methyl Bromide Burial Site B 9. Ashes and Metal Burial Site 10. Solid Waste Burial Site 11. Trichloroacetic Acid Burial Site 12. Sulfuric and Hydrochloric Acid Burial Site 13. Mixed Chemical Burial Site B 14. Municipal Waste Burial Site 15. Sodium Burial Sites 16. Unknown Acid Burial Site 17. Mixed Chemical Burial Site C 18. Plane Crash Residue Burial Site 19. Former Tear Gas Canisters Burn Site 20. Probable Asphalt Burial Site 21. XXCC-3 Probable Burial Site 22. Hardware Burial Site 23. Construction Debris and Foods Burial Site 24. Former Miscellaneous Burn Site 25. Golf Course Pond 26. Lake Danielson 27. Former Recoup Area 28. Recoup Area Building 29. Former Underground Waste Oil Storage Tank 30. Paint Spray Booths (3) Former Paint Spray Booth 31. 32. Sandblasting Waste Accumulation Area 33. Sandblasting Waste Drum Storage Area 34. Building 770 Underground Waste Oil Storage Tanks (2) 35. DRMO Building T-308 Hazardous Waste Storage Area 36. DRMO Hazardous Waste Concrete Storage Pad DRMO Hazardous Waste Gravel Storage Pad 37. 38. DRMO Damaged and Empty Hazardous Materials Drum Area DRMO Damaged and Empty Lubricant Container Area 39. 40. Safety-Kleen Units (9) 41. Satellite Drum Accumulation Areas (5) 42. Former PCP Dip Vat Area 43. Former Underground PCP Tank Area Former Wastewater Treatment Unit Area 44. 45. Former Contaminated Soil Staging Area 46. Former PCP Drying Area

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## Table 4-1

	List of All SWMUs and AOCs (Con't.)
47.	Former Contaminated Soil Drum Storage Area
48.	Former PCB Transformer Storage Area
49.	Medical Waste Storage Area
AOC A.	Dunn Field Drainage Ditch
AOC B.	Lake Danielson Outlet Ditch
AOC C.	Golf Course Pond Outlet Ditch
AOC D.	X-25 Flammable Solvents Storage Area
AOC E.	DRMO Drainage Ditch
AOC F.	North Run-Off Area
AOC G.	West Run-Off Area
AOC H	Building 629 Spill Area

# **15 8**2

### <u>Table 4-2</u>

SWMUs and AOCs Requiring No Further Action

- 18. Plane Crash Residual Burial Site
- 22. Hardware Burial Site
- 23. Construction Debris and Foods Burial Site
- 28. Recoup Area Building
- 30. Paint Spray Booths (3)
- 33. Sandblasting Waste Drum Storage Area
- 35. DRMO Building T-308 Hazardous Waste Storage Area
- 36. DRMO Hazardous Waste Concrete Storage Pad
- 40. Safety-Kleen Units (9)
- 41. Satellite Drum Accumulation Areas (4)
- 44. Former Wastewater Treatment Unit Area
- 45. Former Contaminated Soil Staging Area
- 47. Former Contaminated Soil Drum Storage Area
- 49. Medical Waste Storage Area

AOC D. X-25 Flammable Solvents Storage Area

- AOC E. DRMO Drainage Ditch
- AOC F. North Run-Off Area
- AOC G. West Run-Off Area

### <u>Table 4-3</u>

List of SWMUs Requiring RFA Phase II Sampling or an RFI Mustard Gas Burial Site 1. 2. Ammonia Hydroxide Burial Site з. Mixed Chemical Burial Site A POL Burial Sites 4. 5. Methyl Bromide Burial Site A Eye Ointment Burial Site 6. 7. Fuming Nitric Acid Burial Site 8. Methyl Bromide Burial Site B 9. Ashes and Metal Burial Site 10. Solid Waste Burial Site 11. Trichloroacetic Acid Burial Site 12. Sulfuric and Hydrochloric Acid Burial Site 13. Mixed Chemical Burial Site B 14. Municipal Waste Burial Site 15. Sodium Burial Sites 16. Unknown Acid Burial Site Mixed Chemical Burial Site C 17. 19. Former Tear Gas Canisters Burial Site Probable Asphalt Burial Site 20. 21. XXCC-3 Probable Burial Site 24. Former Miscellaneous Burn Site 29. Former Underground Waste Oil Storage Tank 31. Former Paint Spray Booth 34. Building 770 Underground Waste Oil Storeage Tanks (2) 37. DRMO Hazardous Waste Gravel Storage Pad 38. DRMO Damaged and Empty Hazardous Materials Drum Area 39. DRMO Damaged and Empty Lubricant Container Area 42. Former PCP Dip Vat Area 43. Former Underground PCP Tank Area 46. Former PCP Drying Area 48. Former PCB Transformer Storage Area AOC A Drum Field Drainage Ditch AOC B Lake Danielson Outlet Ditch

AOC C. Golf Course Pond Outlet Ditch

### Table 4-4

SWMUs and AOC Requiring a Characterization RFT

- 25. Golf Course Pond
- 26. Lake Danielson
- 27. Former Recoup Area
- 32. Sandblasting Waste Accumulation Area

AOC H. Building 629 Spill Area



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